Bacterial Skin Infect.

(1) NL Skin Flora:

Class	Organism	location on Body
Aerobic Cocci (G+ve Cocci)	Staph Epidermidis " Hominis " Luteus, Micrococcus	All body sites specially intertrigenous
Aerobic Coryneform (G+ve Bacilli)	Corynebacterium minutissimum " Xerosis	Intertrigenous
Anaerobic Coryneform (i.e rod-shaped)	Propionibacterium → Acnes, Avidum, granulosum	Sebaceous Glands & Follicles.
G-ve	Acenitobacter spp	Intertrigenous
Yeast	Pityrosporum ← ovale, orbiculare (Malassezia) (Normal Commensal lipophilic)	skin rich in sebaceous glands (scalp, upper < chest back)

NB Staph aureus: Not member of Resident flora but it may be found in:

- Ant. Nares → 30%
- Perineum → 20%
- Axillae & Toeweb → 10%
- Atopic skin → 90%

= of population

recurrent Polls (infection) Abcess

(2) Bacterial skin infection includes:

(A) Gram +Ve :

- Staph. aureus
- Strept. Pyogenes
- Corynebacteria
- Others:
  - Clostridial inf.
  - Bacillus anthracis
  - Bacillus Cereus
  - Corynebacterium diphtheriae

(any): Erysipelothrix Rhusiopathiae → Erysipeloid

(B) G- Ve :

- Pseudomonas Aeruginosa
- Neisseria Meningitidis
- Bartonella → Cat scratch dis / Angiomatosis / Bartonellosis. (any)
- Brucella
- Burkholderia
- Malakoplakia → (any) (HL)
- Salmonella
- Klebsiella
- Francisella
- Yersinia pestis.
- Haemophilus influenzae
- Streptobacillus moniliformis
- Anaplasmosis & Ehrlichiosis

(C) Spirochaetes: → T. Pallidum

✓ Borrelia Burgdorferi (any)

. Endemic (non Venereal) Treponematoses → Yaws / Pinta (any)

(D) Bacteria previously classified as fungi:

✓ Actinomycosis

✓ Nocardiosis → Actinomycetes

CIP. · Mycetoma

Diseases Caused by Staph aureus

1- Direct infection: (Tend to invade appendages):

- Impetigo (Non bullous)
- Ecthyma (±)
- superficial folliculitis
- Sycosis Vulgaris
- Furuncle (Boil)
- Carbuncle
- Abscess
- Pyomyositis.

2- 2ry infection: of ulcers, Burns, Eczema

3- Toxins ← mediated ← by swab → (no Staph present)

- Bullous impetigo
- SSSS
- TSS ← (Toxic shock syn)
- Staph. Scarlatina

Granuloma

4. Botryomycosis (granulomatous staph inf.)
5- Pyoderma Vegetans.

6- dis. influenced or provoked by it e.g (AD) ← (Atopic Dermatitis)

Impetigo

Def Staph &/or strept inf. of (superfacial) Epid.

A Etiology:

- Bullous Impetigo → staph. (it represent localized form of SSSS)
- Non Bullous (Imp. Contagiosa) → staph & ± strept. (staph > strept)

NB:
- the 1ry pathogen in both types is staph. & less commonly strept.
- Recently 2005: (in Non Bullous): staph
  - developed countries → most prevalent in both types
  - developing " → prevelante of S. Pyogenes.
- most infect. start as (strept) → Later replaced by staph. (staph. ± produce toxins that kill strept) — so explain why staph always isolated

[staph أهم دايماً في Impetigo]

	Non Bullous (Crusted) (Contagiosum)	Bullous Impetigo (Circinate)
Incid.	more common (70% of cases)	less common
Age	Children.	Neonatal
Site	Any site: Common: Face (perioral, peri-nasal), Limbs, scalp (Except) Palms & soles.	Any site: Common: Face. Including: Palms & Soles. [illegible]
C/P	Erythem. macule → vesicle → pustules → rupture → honey-colored yellow (crust) (Crusted Impetigo)	small vesicle → superfacial flaccid Bullae rupture → circinate ē collarette scales (But (No) crust & (No) surrounding Eryth.)
Sys.	Mild L.N & systemic manif.	No L.N or systemic manif. but ± weakness, diarrhoea & fever
H/P (organism)	1- Subcorneal blisters 2- Few acantholytic cells 3- st. malpighii → spongiosis ē Neut. 4- (+ve) bact. in ← staph & strept cells lesions (in) 5- upper dermis: intense N. & [illegible]	1- sub st. granulosum blister filled ē Eos. 2- Acantholytic cells 3- upper dermis (PMNL) [(In) SSSS → Free] 4- (No) Bact. in lesions

Complications

• Non Bullous

Acute Post Streptococcal GN (APSG):

- (≈5%) of Cases of non bullous Impetigo Caused by Strept. pyogenes (GABHS)
- Serotypes: 1, 4, 12, 25 & 49
- after Latent period (3 Ws) (in Sore throat Latency is 1 to 5 ds)
- Risk: is (not) altered by antibiotic
  [child → 6y]

- Usually Age < 6ys
- prognosis:
  - Excellent: in children
  - Bad: in Adults.

- NB: Impetigo (don't) Cause Rheumatic Fever

• Bullous

- In Immuno Compromised Patients: it ± → SSSS.

• DD:

Bullous

- Bullous papular urticaria
- Hsv
- Thermal burns
- Bullous diseases.

Non Bullous

- Insect bites
- Eczema
- Hsv
- Varicella
- Candida.

• Treatment:

1. Crust Removing By: Wet dressing application H_2O_2 or olive Oil
2. Antibiotic:

Topical

- Fusidin / Mupirocin (ointment)

Indications:
- a. Healthy Patients.
- b. Limited dis
- c. Superficial lesions
- d. No systemic manifs or L.N

Systemic

- Indicated if:
  1. Severe dis
  2. deep impetigo & immuno (compromised)
  3. systemic manifs or L.N
  4. scalp impetigo

Some NBs on Impetigo:

(1) Mild dis. in healthy patient without Systemic manifs. → Treat ē Topical only (Equal or better than Systemic)

(2) Types of Impetigo: (6)

- Bullous
- Non Bullous (Imp. Contagiosa)
- Circinate
- Crusted
- Common When Infect^ occurs in preexisting wounds
- Ecthyma

(3) lines of ##:

(NB)

1. Cerxim tab
2. Cefumax
   - no tab
   - Susp. & vial.
3. Cefuroxime
   - Zinnat tab 125 (Susp) / 250 / 500
   - Zinnat inf. 250 / 750 / 500

- **UnComplicated** (mild dis. + Healthy pt. + No Systemic manifs.)
  - 1st line → Topicals
    - Fucidin
    - Mupiracin.
  - 2nd line → Oral
    - Penicillins (Beta lactamase resistant)
    - Cephalosporins (1st or 2nd gen.)
    - Macrolide
- **Complicated** (IV)
  - 1st line
    - Ceftriaxone (3rd Gen) (IV)
      - Rocephin 500 / 1000
      - Ceftriaxon
  - 2nd line (2nd Gn).
    - Cefuroxime
    - Ampicillin / Sulbactam.
      - (Unasyn) 375 tab
      - Unicfam
        - Vial 375 / 750 / 1500
        - Tab: 375

طبعاً لا تستخدم فوق crust ولكن بعد ازالته بالطرق

When Dealing ē impetigo always put in your mind MRSA..!!

NB: Clinical Tricks: ## of impetigo
1. Soak Crusted areas كمادات ماء + خل توضع لمدة ١٠ دقائق كذا مع الصبغ ← Remove Crust
2. Fucidin
3. Systemic-

Ecthyma

Def → deep ulcerating form of non Bullous impetigo; That's caused by The Same Pathogenis of impetigo but infection & inflammation extend to the upper dermis → Thick crust & ulcer → scarring. (whole Epid + upper Dermis).

organism: (Strept) common > staph

C/P:
- initial vesicle or vesiculo pustules → Enlarge → Hgic crust —separate→ punched out ulcer c̄ purulent Necrotic base → slow healing → scarring.
- Site: commonest at shin & dorsum of feet.

NB Strept ±
- initiate the lesion
- 2ry inf. pre existing around.

Risk factors:
1. Young age (children)
2. old age
3. Immunosuppression
4. poor hygiene.
5. Neglected impetigo
6. minor Trauma (Insect, scratching & dermatitis)
7. High Humidity & temp.

Complications:
- Staph. Contamination.
- Bacteremia.
- Cellulitis
- Osteomyelitis.

DD
- Ecthyma gangrenosum
- Vasculitic ulcers.

Treatment
- Systemic Rx: as impetigo
- Wash c̄ Soap then use → Fucidin or Mupirocin
- Improve Hygiene.
  1. غسيل يوميا بالماء والصابون.
  2. تغيير الهدوم والملابس
  3. استخدام ملابس وفوط خاصة
  4. Avoidance of Trauma.

4. Staph inf. related to Hair follicles

1- superficial pustular Folliculitis (Follicular impetigo of Bokhart).
   . infect° of Follicular Ostia ← opening

2. SYCosis Vulgaris = (SYCosis barbae) : infection of (whole depth of Follicle) (of Beard & Moustach.)

3. Furuncles = Boils :
   . Staph. inf. of whole (depth of the Follicles) + (Surrounding dermis.)

4. Carbuncle: . Contiguous collection of inflammed Follicles (grouping of ≥ 2 furuncles)
   . inf. extend to deep S.C.T → more severe Sympt.

NB (1) Abscess : Can occur any where (but) Furuncle affect the hair follicles.

(2.) All furuncles are d.t staph: (but) anogenital recurrent Furuncle, G-ve may be involved.

CIP

1- Bokhart impetigo : dome shapped pustule at the orifice of the follicle.

2. SYCosis barbae: Follicular papules & pustules (that) may remain discrete or coalesce into plaques.
   ← Affect beard & Moustach of adult males.

   NB: Lupoid SYCosis: Follicles destroyed by scarring ē pustules Fringe the advancing margin around pink atrophic scar.

lupus like

3- Furunculosis : Predisposing factors :

1. ↓ Immunity e.g DM & HIV
2. Itchy Skin e.g scabies & miliaria
3. Alcoholism
4. Obesity

- Tender red Nodule → Enlarges → discharge pus → scarring ← deep abscess

4. Carbuncle: swollen, painful, suppurating area (plaque) discharging pus from several openings or sinuses ; Commonest on Nape of diabetics

NB. For furuncle & carbuncle at first → drainage then → Antibiotics

- Any site can be affected by furuncle & carbuncle but the commonest are:
  - face & Nape of Neck
  - Chest
  - back
  - axillae &
  - Buttocks.

Chr. or Recurrent Furunclosis

(حريف بيجي بدعامل وخراريج مستمرة)

أدور على

قاعدة

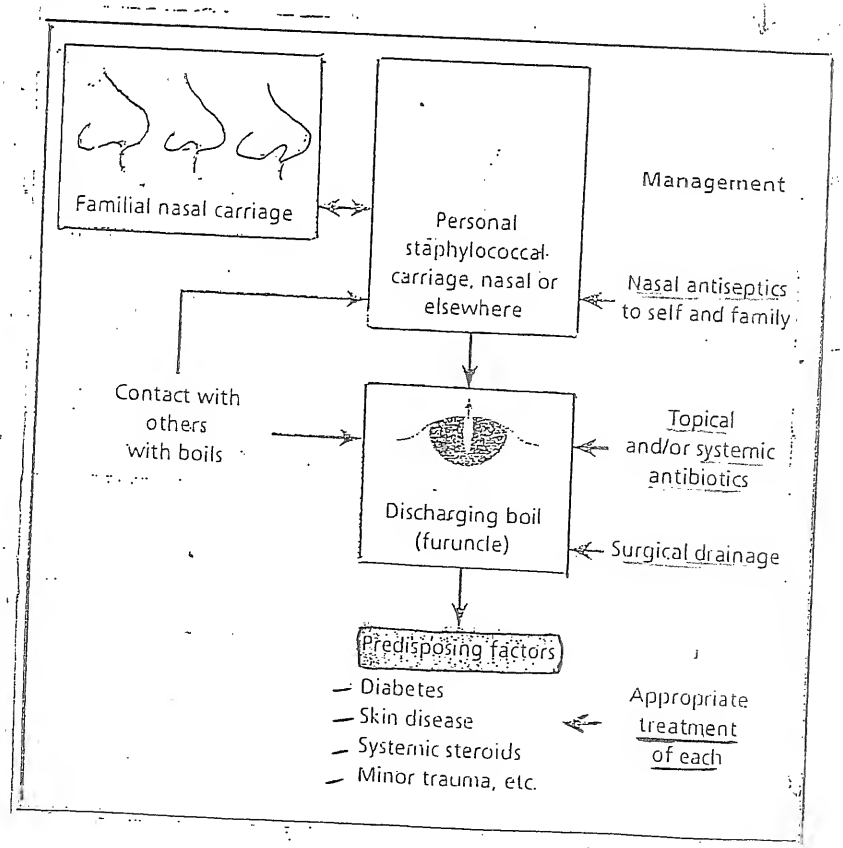
When you see this Case Put in Your mind 3 points.

① Ask about predisposing Factors PPF

- Local (impaired skin integrity)
  - pressure
  - Friction
  - Hyperhidrosis
  - Dermatitis
  - Dermatophytes
  - shaving
- Systemic
  - DM
  - HIV
  - malnutrition
  - Blood dyscriasis
  - * Isotretinoin & Etretinate

② Nasal swab From the patient & His family For: Colonized Staph. aureus. (30% of Population)

③ Consider MRSA



② Nasal swab

③ MRSA and ~~HIV~~

① PPF

Treatment → (A) (B)

[A] Decolonization measures

(For : Nose, axillae, Perineum)

كلورهيكسيدين

1. يتم استعمال مطهر السيتافلون يوميا لكل الجسم او Bleach Bath (as in AD) خصوصا أماكن الـ (axillae, grion, Hands)
2. غسل الأيدي باستمرار . (باستعمال الكحول أو السيتافلون)
3. غسل الملابس والمفارش باستمرار .
4. دهان « فيوسيدين » مرتين يوميا حول فتحتي الأنف والشرج [or Mupirocin] وكذلك في الأماكن الأخرى Flexures
5.

[B] Systemic Antibiotics For Eradication of staph.

For

MSSA
↓
Rifampacin (2caps/d) 300mg
+
Flumox (2caps/d)
↓
لمدة ١٠ أيام

MRSA
(i). TMP + SMX
(ii). Minocyclin or Doxy.
(iii). Clindamycin
كبسولة (١٥٠) يوميا لمدة ٣ شهور

↓ if failed

يعطى وريديا على مدار ساعة → IV Vancomycin

S.E : ① pain
② thrombophlebitis
③ Red Man Synd : ← سببه Most cell degranulation
- Flushing & erythematous Rash appearing 4-10 mins after start or completion of Infusion.

after
(تاريخ) ④. LABD

Methicillin Resistant Staph aureus (MRSA)

Def → Strain of staph aureus that's resistant to Large Group of Beta-lactamase resistant antibiotics as penicillins & Cephalosporins

(Methicillin, Oxacillin, Nafcillin, Flucloxacillin)

AET: presence of "mecA" gene in the bacteria → alteration of site at ⓦ Methicillin binds to kill the organism.

(PBP2a)

Infection caused by MRSA:

- The same inf. as other staph because the organism itself is not any more virulent or infectious.
- MRSA can colonise body sites as ! usually staph. aureus but causing sickness. (see staph aureus colonization)

So the problem with MRSA is d.t Antibiotic resistance not virulence.

Types of MRSA

or Hospital Acquired

(ss or equired)

① Health care ass. MRSA (HA-MRSA) = Nosocomial Transmission among Populations

② Community ass. MRSA (CA-MRSA) (Less Common)

Clinical presentation of CA-MRSA (As staph)

- Furunculosis (most Common) ± → Abscess or cellulitis
- impetigo
- SSSS
- Life threatening e.g. ← Bacteremia, septic shock, TSS: — less Common

Diagnosis of MRSA:

at first (suspect) MRSA if:

1. Prevelance of MRSA in a given Community
2. possibility of Nosocomial inf.
3. Severe inf.

↓ do

Culture & Sensitivity.

Treatment of MRSA:

1. Decolonizat° Measures → See recurrent furunculosis.
   (also use of fluoroquinolones as they help Colonizat°).

2. Antibiotics:
   - Sulfa (Septrin) — Ec Drug eruption.
   - Tetracyclines
   - Clindamycin (Dalacin C)

   → (CA-MRSA are sensitive but HA-MRSA are resistant)

   HA-MRSA (nosocomial)

   - Vancomycin (CA MRSA ++ / HA-MRSA ±) — for severe cases
   - Linezolide & Teicoplanin [but some strains are resistant] — for severe cases
   - Daptomycin
   - Quino- & Dalfopristin → Resistant MRSA
   - Tigecycline

Empiric

NB. IV + Vancomycin should be considered in:

1. Severe, Life threatining inf. in areas where MRSA is present
2. pts. with History of MRSA Colonizat°
3. IV drug users.

* Beta-lactamase resistant Antibiotics ??

either →
- Methicillin, dicloxacillin, Cloxacillin, ..
- Amoxicillin + B-lactamase inhibitor: clavulonic acid (Emox-Clav)
- Ampicillin + " " : sulbactam (Unicitam or Unasyn)

dose 50 mg/kg/day.

Folliculitis

def → presence of inflammatory cells within walls & Ostia of Hair follicles → Follicular based Pustules & papules

NB: perifolliculitis: presence of inflammatory cells in the perifollicular tissue & reticular dermis.

Predisposing factors

- frequent shaving
- Immunosuppression
- preexisting dermatoses
- Long term antibiotic use
- occlusive clothing or dressings
- Hot Humid conditions
- DM / obesity

- Clinical presentation:
  - Itchy (less commonly painful) follicular pustules pierced centrally by hair.
  - If No Pustules: The follicular papules or Collarette of scales are clue for D.

3 Types of Folliculitis.

Ni Itchy → 1- **Superficial**: multiple small papules & pustules on an Erythematous base pierced centrally by hair (although hair may not be visualized)

Ni Pain → 2- **Deep**: Erythematous, often Fluctuating → Nodules → more pain → Suppurative drainage & ± Scarring & Hair loss.

3- **Patterned folliculitis** on areas of Shaving or occlusion

Site: any hairy area can be affected but commonest

- Face
- Scalp
- Thighs
- Axillae
- Inguinal

(usually on areas of occlusion & for Terminal Hair)

Causes of Folliculitis

① Infection:

Bacterial

G+Ve (Staph)

- Superficial
  - Follicular Impetigo
  - Bokhart type
- Deep
  - Sycosis barbae
  - Furunculosis
  - Carbuncles

G-Ve (Pseudom, Klebs, proteus)

① G-ve folliculitis

② Hot Tub Folliculitis

Viral

- HSV
- VZV
- Molluscum
- HIV

Fungal

- Dermatophyte
  - Superficial: (T. barbae)
    - Farmer
    - Onside of face (Submaxillary or chin)
  - ② Deep: Kerion Like (see T. barbae).
  - ③ Majocchi granuloma (see fungal inf.)
- Candida
  - Candidal Folliculitis (see candida).
- Pityrosporum
  - Pityrosporum folliculitis (see Fungal inf.)

Parasitic (Mites)

- Demodex Folliculitis (see parasitic)

Others:

- (Acrodermatitis Enteropathica)

eosinophilic folliculitis

② Irritation:

- Waxing & Threading.
- Electrolysis
- Pseudofolliculitis barbae

③ Contact reaction:

- Occlusion By
  - Moisturizers
  - Adhesive plasters.

· **Topicals:**

- Coal tar
- Cutting oils
- Cs (overuse & perioral dermatitis*)

(4) **Inflammatory skin dis.** → Neutrophil ass. 1ry scarring Alopecia

- F. decalvans
- Dissecting Cellulitis
- Erosive pustular dermatosis
- A. Keloidalis

(deep seated sterile folliculitis that ↑ → scarring)

- LP ← Lichen Planus
- DLE ← Discoid LE
- Folliculitis decalvans.

(5) **Immunosuppression**

- * Eosinophilic folliculitis ← (HIV) ass.)
  - * severely itchy
  - ↑↑ by HIV drugs ← Anti viral therapy of HIV (HAART)

(6) **Acne / Variants**

- Acne Vulgaris.
- Nodulocystic Acne
- Steriod Acne.
- Rosacea
- Propionibact. folliculitis.
- Acne Necrotica
- Acne Necrotica Miliaris
- Chloracne
- Acne Keloidalis Nuchae.
- Hidradenitis suppurativa ← Acne inversa (ry)

(7) Idiopathic

مهم ع الامتحان
يطلب نوع منك

Another Classificat^ for folliculitis

Superfacial

Acute

- follicular impetigo of Bokhart
- G-ve folliculitis.

Chronic

- AV
- Acne Necrotica Miliaris
- Chr. folliculitis of the legs.

Deep

Acute

- Furuncle
- Carbuncle.

Chr.

- Sycosis barba.
- Pseudo follic barbae
- A. Keloidalis ← Necrotica

3. Eosinophilic Folliculitis: (3 Varieties) (سؤال امتحان)

(A). Ofuji dis: (Eosinophilic pustular folliculitis):-

- 30 Ys, ♂ Japanese (M:F = 5:1)
- discrete papules & pustules → circinate arrangement
  → peripheral rim of pustules ē Central clearing at Acne prone sites.-

1st line: Endomethacin

2nd (##): .UVB .Dapsone .Colchicine .Cs

(B) (AY) Immunosuppression Ass: (HIV ♂ Pt ē CD4 <300)

Tm ass Leuk, Lymph. HIV ass.

- Persistent
- (No) annular pattern
- Face, scalp & Trunk ("Very itchy")
- (##) → HAART if failed → Antibiot, Antihistamines & UVB

(C) Infantile:

(##) ← .Self Limiting .Symptomatic

- 1st 24 hrs resolve → First few ws.
- ♂ infant
- May be cyclic Course Lasts (ms-Ys)
- at scalp & Eye brow → ass ē (Crusting) ← كتكتيح او نوع بثانية
- ± ass ē peripheral Eosinophilia.

Invs for a case of Folliculitis:

1- for Bact: Gram stain
   detection of Nasal Carriers (see recurrent furunculosis)

2. for Fungal: KOH ex.

3. Viral: Culture.

4. Punch Biopsy: for other Cases e.g eosinophilic folliculitis & LP.

- Treatment → according to the Cause.

مرجع من جامع وكذا

Hidradenitis suppurativa

الاسم الاصح → (Acne Inversa = Apocrinitis)

Def Chr., recurrent inflammatory skin disorder ch^ BY recurrent abscess format^ primarily ē in folded areas of skin that contains both Terminal hairs & Apocrine glands.

Etiopathogenesis: follicular occlusion disorder ch^ BY:

Triggers ?? unknown but ? dt

- Idiopathic
- Genetic: AD familial type; HL AB, DR
- Obesity, Hirsutism & AV
- ↑ Androgen
- Endocrinopathies
- Smoking ←
- Irritat^ (moisture & frict^).
- Immunological dysf.: ↑ Innate Immunity Cytokines: IL1B & TNFα

TNF α → inflammation in H.S

لازم تسأل فيه لو هعطاهم الشفاهي

↑IL2 ; ↑IL10,12,17,23

Follicular Hyperkeratosis → Follicular occlusion → follicular rupture → release of (sebum, Keratin, Bact. & hair) into surrounding dermis → inflammatory process that engulf the apocrine gland → rupture of overlying skin ē (Fibrosis & sinus format^) → staph & G-ve Colonizat^. → then scar

- **NB**: 1ry apocrinitis is reported on 5% of cases so it's Not apocrinitis disorder but follicular epith disorder

Epidemiology:
- **Age**: Puberty & Post pubertal (11-50ys) [av. ≃ 23] سنة
- **Sex**: F > M (3:1) but Perianal is M > F

Chronic recurrent abscess like > 3 times/month

CIP :. starts as small, red, Tender, S.C Nodule → suppurat → Fluctual → Rupture through skin → Scarring ē format of sinus Tract → recurrence (≥5 Abscesses/m)

. at ← axillae / groin / Intermammary.

DNNZ → . Distinct Clinical staging have been defined For the Condion: (Hurley's Classificat)

- Isolated = . Stage I : → Isolated abscess (Solitary or Multiple) each w/ Scar or Sinus
- Recurrent sinus = . Stage II : → Recurrent abscesses (" " ") Widely Separated + Sinus Tract format ē Scar
- diffuse or Broad = . Stage III : → diffuse or broad involvement ē Multiple interconnected sinus Tracts & abscesses

NB: Multiple Head Comedones also seen (Black) (Bihead & Trihead)

. Complicat .
- ↑ Metabolic Synd Incid
- Anemia
- 2ry Amyloidosis
- Lymphoedema
- Fistula to ← Urethra / UB / Rectum
- Contractive & limb limitat
- Hypoproteinemia
- NS - Arthropathy
- SCC

JAAD 2014

Nephrotic syndrome

. Pathology :
- heavy mixed infilt. in lower dermis & S.C.T
- Sinus tracts ē inflamm. Cells & Keratin debris.
- G.T & FB Giant Cells.
- in chr. Cases → Extensive fibrosis + destruct of pilosb. follicles & sweat glands.

DD:

1. Staph. Furunculosis & Abcess : → pointed or ulcerate through the skin → No sinus tract format = Not bilateral

- GI

2. Cutaneous Crohn's, Granuloma inguinale, Mycetoma & TB

3. Elephantiasis Nostra Verrucosa : (2ry) to re current Strept Lymphangitis → may distort ! ext. Genitalia.

Medical / Surgical > Treatment

1- General Measures:

- Stop smoking → يحسن إنتاج الكولاجين
- ↓ W.t (if overwt)
- ↓ Frict & moisture (loose undergarments, absorbent Powder, antiseptics, Alum. chloride).

2- Topical tt:

- Clindamycin: Chr. use (↓ staph carriage & 2ry inf.)
- ILCS: in early inflammatory lesions
- others: . Anti Septic Soaps.
  . H_2O_2 ← Hydrogen peroxide
  . Alum. chloride ← تقلل الجراثيم
  . Mupiracin: to eradicate Staph carriers.

3- Systemic tt:

1. Systemic Antibiotics
2. Retinoid
3. Antiand
4. others Biologics

- Cs: 60-80 ms (dramatic response that Flare on discontinuation)
  - Cyproterone acetate (very large doses needed so ?? safety)
  - Cyp. + EE (Diane) → better
- Isotretinoin: (less effective) — 10 mg/day — low dose
- Acitretin (Effective) — Doxy + Flagyl
- Finasteride (5 mg ld for 3 ms)
- systemic antibiotics → (according to Culture & Sensitivity) · as anti-inflammatory
- others (N.B)
  - Cyclosporine
  - TNFα (Infliximab)
  - Botox
  - Humira (Adalimamab) → FDA

4- Surgical tt: (Excision Not incision)

- Surgical Excision of affected area then 1ry Closure or graft
- Surgical deroofing (unroofing) ← effective, minimal invasion + office procedure, tissue preservation
- Co2 laser stripping + 2ry intention healing ← لما تكون طويلة وعالية
- (NB) Avoid incision & drainage → scarring & sinus formation

Anakinra
Infliximab
Etanercept

العلاج الوحيد اللي FDA (Adalimumab)

Syndromes with HS

- occlusion Triad & Tetrad
- PASH & PAPASH.

① Follicular occlusion Triad:

Idiopathic Follicular occlusion on
- Axilla / Groin → 1- Hidradenitis suppurativa.
- Face / Scalp → 2- Acne Conglobata
- Scalp → 3- Dissecting Cellulitis of Scalp.

② Follicular occlusion Tetrad.

= Follicular occlusion triad + pilonidal sinus.

(Pilo = Pilus = hair / Nidal = Nest)

- def.. Chr. condition ch by sinus tract at sacrococcygeal region (at base of spine bet clefts of buttocks)
- the cavity of sinus is filled w/ Nests of Hair ± infected → Abscess.
- Sometimes a cyst called pilonidal cyst is present.
- Ethiopathogenesis ?? may be d/t:
  1- Genetic → genetically prone to follicular occlusion (Triad or Tetrad)
  2- some borne w/ small holes or pits at this site wh is actually enlarged Hair follicle → Frict & mst → hair shaft (Pokes) through wall of follicle → inflammatory FB react.
  * 3- Neighbouring Hairs or free hairs from other parts of body Collect in pit & invade the small opening created by distorted follicle.
  4. Skin & perineal bact are superadded.
- (Risky)

③ PASH (HS)

- Pyog. Arthritis
- Pyod. Gang.
- Acne
- Suppa Hid. adenitis

④ PAPASH (= PAPA)

→ Q. What are Types of Hidradenitis ?? | HL

1. Apocrine Hidradenitis
2. Neutrophilic Eccrine Hidradenitis
3. Recurrent Palmoplanter Hidradenitis:

بتيجي للأطفال وأيضا الشباب في بطن القدم وغالبا بيشتكوا من تيبس مع
وجع وعدم القدرة على المشي

- Lesion: EN like painful S.C Nodules at sole
- Etiology → unknown but ± Pseudomonas
- Recurrence & predisposit:
  - Wet shoes
  - Cold
  - damp Wheather
- ℞: → NSAIDs

Rheumatoid Neutrophilic Dermatosis | HL

- Papules, Nodules & plaques sometimes c̄ Annular Morphology affecting patient c̄ Active R.A & ↑ R. Factor
- Usually at face & Extemities
- ℞: spont resolut or by ℞ of R.A

(320 [illegible] (بولونيا)

SAPHO Synd. (one of Sero -Ve spondylo-arthropathy)

Age: children & adults.

- Synovitis: ant. chest joints & axial skeleton
- Acne
- Pustulosis
- Hyperostosis
- Osteitis

Infections Caused by Staph. Exotoxins.

- Organism: Staph. aureus (Phage gp II, Type 71)
- Toxins: 3 Types:

I. Epidermolytic Toxins (Epidermolysis)

A, B_2D (Exfoliatins)

- Bullous impetigo
- SSSS

II. Enterotoxin

B & C.

- 50% of Non-MTSS (Menesthual Toxic shock synd)

Non-genital sites source of staph

III. TSST-1

- MTSS (50%)
  - Non-Scarlatiniform Eruptions
  - Toxin-Mediated Perineal Erythema
- (Recurrent)

(PVL) Panton-Valentine leukocidin
- ↑ in CAMRS
- Leukocyte destr. & Necrosis

Staphylococcal scalded skin Synd (SSSS)

(Ritters dis & Lyell's disease & pemphigus Neonatorum)

?? Reiters

- **Age**: usually: infants & children.
  - rarely: Adults (d-t renal Excretion of these toxins) Except if they have CRF or Immuno supp. → Mortality rate ↑↑
- **Pathogenesis**: (staph. aureus phage gp II (Type 71))
  - Exfoliative Toxins: A, B, D
    - may
      - Target DsG1
      - Act as Super antigens → ++ T cell cytotoxicity
    - Both → Acantholysis
- CIP ✱ Staph focus ± ← Septic focus
  - Conjunctivitis
  - OM
  - occult Nasopharyngeal inf.
- 1- General Constitutional manifest: (Prodromal Symptoms) (FAHM)
  - Fever
  - irritability
  - Sore throat
  - Rhinorrhoea
  - Severe skin Tenderness = Scalded erythema
- N.B: any erythema lasting large area → called → Erythroderma
- 2- Tender Erythema: First localized to head & Neck & Flexures → 1–2 days → Generalizat (Erythroderma)
- Bullae (large, flaccid = +ve Nikolsky sign).

↓ 3-5 ds

④ Sloughing Desquamat⁻ → raw skin & areas of thin varnish like crust) leaving behind (moist

Face ← · facial Edema · Sad man facies · perioral crust & Red. furrow

level of seperation is at granular cell layer while Basal cell layer is intact so → heal ē out scaring.

⑤ Repithelializat⁻ (Healing): ē in (1-2 ws) Without Scarring.

↓

Mortality Rate = MR
- 3% : in children
- 50% : Adults (Healthy)
- 100% : Adults ē underlying dis.

(FY)
- Complicat⁻:
- Alopecia (TE)
- onycholysis
- (R.F)
- Vocal Cord paralysis
- Carpal Tunnel synd.
- Amenorrhea

NB
- DSG1 Targeted into 2 diseases
  - Pemph. Foliaceous
  - SSSS

- Clinical Varieties:
  1. localized SSSS (Bullous impetigo) → +ve dermal infilt.
  2. Generalized SSSS → -ve Dermal infilt.
  3. Abortive SSSS (Scarlatiniform): only shows Erythroderma & desquamation ē out Bullae

- Diagnosis
  1. clinical
  2. staph Isolat⁻ from (Focus)
     - lesion → -ve
     - Eye, Nasopharynx, Feces, skin, Pyogenic inf.
     - Blood: -ve in children but ±ve in adults
  3. Toxins detect⁻:
     - Frozen sect⁻ then ELISA or double Immuno diffusion.

27

DD :

(حاجة مهمة)

SJS
1- TEN : اكرحل
2- Sun burn,
3- drug Erupt^
4- Kawasaki
5- Extensive bullous Impetigo.

(Cases / أكمل)

يعرض إلى يكلفني ...
1. Nikolsky sign
2. Tzanck smear

	SJS/TEN	SSSS
AET	usually drug induced	Staph aureus exotoxins
Age	Adults > 40 ys.	infants & young children
Skin:	Areas of sparing present	Generalized
MM	involved (severe)	uninvolved X
Face	Lip & mm redness & oedema	Perioral crusting & fissuring, (mild) facial swelling & Erosion.
Nikolsky sign	in some areas it is, X difficult to Elicit. (±)	+ve in seemingly uninvolved skin. (++)
Healing	> 14 ds ē scarring	With in (7-14 ds) ē or ē out ℞
Path	Dermoepid. separat^ (DEJ), Sparse dermal infilt.	split at granular layer, No dermal inflamm. infilt.
Tzanck Smear	* Cuboidal cells ē Large Nuclei (of Lower Epid.) or * Inflammatory cells.	* Elongated Epith. cells ē Small Nuclei (upper epid dermis) * No inflammatory cells.
℞	1- Burn unit 2. IVIG 3- CS (Controversy)	1- Antibiotics 2. Supportive care
Prognosis	Bad (MR ??)	Good (MR) ??

℞
1. Antibiotics (Beta lactamase resistant) for 1W
2. Emollients.
3. ℞ of staph carriers.

"NB"
- Hospitalizat^ & IV ℞ → For Extensive, Generalized cases
- oral, Home ℞ → For mild cases.

Toxic shock Synd (TSS)

- **Def:** Multisystem dis. caused BY St. aureus producing Exotoxins.

- **Types:**

	Menestrual TSS (MTSS)	Non MTSS.
Source of staph	Vagina of Menestruating Women using high absorbant Tampons	Surgical procedures- Wounds, Ulcers Catheters. IUD
Incid M:F	Was Common at 1980, Now less Common ← F only	more Common Nowdays. M=F
Causative Toxins	TSST1	TSST1 Enterotoxins B & C.
MR	5%	12%

- **Etiopathogenesis:** the Major risk factors is absence of Antibodies against TSST1 → 3 Mechanisms:-

(1) direct toxic effects on Multi-organs.

(2) Impaired Cleatance of Endogenous Endotoxins derived from Gut flora.

(3) Act as super Ag.

Dx & Criteria for D:

- Fever > 38 °C
- Rash: diffuse macular erythema
- Desquamation: after 1-2 wks (sp. Palmoplanter)
- Hypotension: systolic < 90 mm Hg for Adults (< 5 percentile for children)
- involvement of ≥ 3 organs:
  - CNS (disorientation)
  - Renal (↑ Pus, BUN & Creatin.)
  - GIT (Vomiting & diarrhoea).
  - Liver (↑ enzs).
  - Blood (thrombocytopenia).
  - MM (Hyperemia)

- Lack of evidence of other causes.

(-Ve)
- -ve Serology for: RMSF & leptospirosis
- -ve Culture for: Blood, CSF & throat. (لأن toxins)

NB

- Streptococcal TSS differs from staph TSS in the following:-

1. rapid progressive
2. More destructive
3. MR 30%.
4. Strept isolation (GA, M strain)

Treatment

Stable H & Asthio.

1. Antishock Measures e.g fluid for Hypotension
2. ttt of Source of inf. (remove meshes)
3. Antibiotics (Beta lactamase resistant): antibiotics that eradicate the toxins are preferred e.g rifampicin, clindamycin, Quinolones.
4. If severe shock unresponsive antibiotics → (loading dose Cs)

⊙ Diseases Caused by Streptococcus

(Tend to Invade the skin Proper)

1- Direct infection:

- Impetigo (non Bullous)
- Ecthyma
- Cellulitis
- Erysipelas
- ⊙ Intertrigo (NB!)
- Perineal Dermatitis
- Angular Cheilitis
- Blistering distal dactylitis
- Necrotizing Fasciitis
- strept. ulcer

2. Secondary infection of: ulcers / Burns / Eczema

3- Toxins :-

- Scarlet fever (Erythrogenic Toxin A, B, C)
- Toxic shock-like Synd. (Exotoxin A,B) ← more severe than TSS of Staph.

4- Reaction to bacterial Ag:

- EN ← Erythema Nodosum
- Vasculitis (Henoch-Schenolein purpura)
- Rheumat. fever (RHR)

5- Diseases Influenced or provoked by it:

- Psoriasis (Guttate).

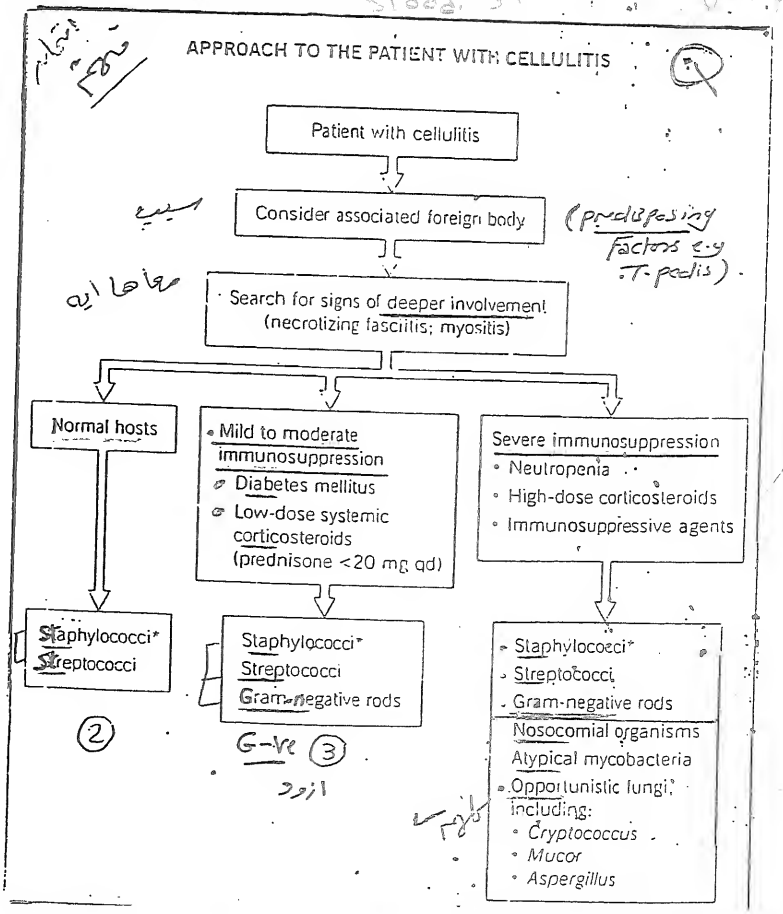
- Impetigo & Ecthyma → See Staph inf.
- Cellulitis & Erysipelas:

Cellulitis

- Def → infection of deep dermis & S.C.T Caused most Commonly by GABHS & S. aureus. (Strept > Staph)
- Causative organism: →
  - Most Common → Strept (2/3) & Staph (1/3)
  - Less Common: G-ve bacteria e.g
    - H. influenzae
    - G-Ve organisms
    - Atypical Mycobact.
    - opportunistic fungia (in immunocompromised) < Cryptococcus / Aspergillus
- Route of Infection:-
  - Immuno Competent → Exogenous (Skin break) route
  - Immuno Compromised → Haematogenous (Blood)
- Predisposing factors:-
  - Lymphoedema
  - Alcaholism
  - DM
  - IV drug abuse.
  - PVD (Peripheral Vascular Dis.)
  - Lymphatic damage
  - T. Pedis.
- Causes of Recurrence:-
  1. T. pedis
  2. obesity
  3. Lymphatic damage
  4. Venous insufficiency

T. pedis is 1 Commonest

Necrosis



C/P

- ⊙ **Systemically**: FAHM
- ⊙ **Locally**:
  1. 4 Cardinal signs of inflamm.
     - Hotness
     - Redness
     - Tenderness
     - Swelling
  2. the lesion has ill defined & (Non) palpable border ← موقعه ؟؟
  3. severe inf. → vesicles, bullae, pustules & Necrosis (Bullous Cellulitis)
  4. Ascending Lymphangitis & Regional L.N may be (+ve)

  there (±) [3 & 4]

  5. Site: Commonest site in
     - Adults → lower extremities
     - Children → Face & Neck ← Facial cellulitis → G-ve H. influenza → G-ve Ab [illegible]
     - IV drug Abusers → upper Extremities.

Complications (rare):
1. GN (if Nephritogenic strept.)
2. Endocarditis.
3. Lymphadenitis.
4. Lymphatic system damage → Recurrent attacks

Pathology:
- mild to mod inflamm. infilt. (mainly (N) & (L)) Throught dermis & Extend to S.C.T
- Oedema & dilatation of Lymphatics & BVs
- ← Special stain → for organism detection
- Subepid. bullae. (±).

DD:
1. Erysipelas
2. Erysipeloid (Infectious & inflammatory)
3. Pseudo Cellulitis: Inflammatory (Non) infectious) Cellulitis Like lesions. ← بولونيا الجزء ٣ (P 1084)

نقل — **NB**: Erysipeloid ≠ pseudo cellulitis

Invs ① WBCs: usually NL or slightly ↑↑

② Blood culture → usually +Ve in Immunocompromised.

③ Need for invs. is:

- H. influenzae
  - ↑ WBC (± left shift)
  - +ve Culture (Blood)
- Children & Immunocompromised
  - Needle Aspiration
  - Biopsy.

Treatment: ① Mild cases: at Home ttt by antibiotics (anti strept & staph) for 10ds.
MSSA MRSA

- #recurrence
- تعليمات: Bed rest, Leg Elevat., Wet dressing to bullae & exudate, T. pedis ttt Tiger
- Antibiotic

② Severe cases & facial Cellulitis: Hospitalization & "parentral Antibiotics."

Best Δ antibiotics:
- Unasyn [Cover GA BHS & MSSA]
- Minocycline or Clida. [Cover MRSA]
- Flagyl [Cover G-Ve]

③ Failed response for 1-3 ds: → Culture & Sensitivity; → Consider MRSA

④ ttt of Recurrent attacks (See below)

⑤ Surgical intervention of: Crepitus, Circumferential or Necrotic.

NB Avoid NSAIDS: may mask Symptoms of Necrotizing infection.

NB: Facial Cellulitis Common in:

- Elderly > 50 → staph. or strept.
- Children → H. influenzae B & S. aureus (Commonest)

- Cellulitis d.t:
  - Cat & dog bite → Pasteurella Multocida
  - injury during Water Contact → G-Ve
  - infant Cellulitis (< 6ms) Consider → Hematogenous route; → Septic focus: osteomyelitis, Arthritis, kidney, ...
    Neonatal: Group B Strept.
  - Immunocomp. → G-Ve or Fungal
  - peri wound Ein < 24 hrs → Clostridium causing

Cellulitis according to Age
Neonate < 6ms: Gp B Strept.
Children: Staph & Strept., H. influenza
Healthy adult: Strept & Staph
Immunocomp. → G-Ve (mild/Severe)

Clindam (5-10) mg/kg eg Dalacin C cap

Erysipelas (St Anthony's Fir)

- **Def.** streptococcal inf. of Whole dermis (± upper S.C.T) & Significant lymphatic spread.

- **NB:** Very similar to Cellulitis but differs in:
  - affect ! Whole dermis. (No S.C.T affect)
  - Caused by: Strept. (other organisms are rare)
  - lesion Ch BY:
    - Well defined raised border
    - ± dimpled (Peau d'orange)
    - ass. ē Lymphangitis (streaks)

Chr. Recurrent Cellulitis & Erysip.

- **Note:**

Single attack of Cellulitis & Erysip. → Usually followed By → Recurrent attacks (always.)

(!!!) (1-) !!! of predisposing Factors e.g T. pedis, Lymphoedema.

(2-) Chr. Antibiotic use e.g
- Long acting Penicillin
- Penicillin G (250 mg bid.)
- Erythromycin (250 mg once or Twice / day) ← For life

(if allergic give)

DD of Erysipelas Like (Erysipeloid) or Cellulitis Like (pseudoCellulitis) Conditions:

Inflammatory like → "Non infectious"

- Erysipeloid of Rosenbach
- Cancer Erysep- Episeloid
- Angioedema
- EN
- bites (insect & spider)
- CD (Contact Dermatitis)
- Drugs < FDE (Fixed Drug Eruption) / TEN / Warfarin Necrosis
- DVT & lipodermatosclerosis (لو شكينا فيها نعمل Doppler عالطول)
- Sweet's & Wells' Synd.
- HZ
- ECM
- FMF
- Inflammatory < Morphea & GA.

NB Group B Streptococcal inf.:

- (25%) of Adults having it as a commensal in Genital & GIT.
- inf. Caused by it ±:
  - Post partum abd. & perineal Erysipelas.
  - Neonatal Sepsis & meningitis
  - → orbital & Facial Cellulitis

Streptococcal intertrigo

under recognized entity

- usually affect moist intertrigeneous areas (axillae, Neck, groin, anticubital areas & Post auricular) of infants & children (d.t moisture & Friction) ← منتشر واكثر

- Clin: (1) well defined finely red Erythema & ± psoriasiform plaques. (but No Satellites) ?? Fungal

(2) Ass ē Pain / Bad odour (chic) *

organism
- Strept
- (±) Staph / Proteus / mirabilis

DD: other Causes of Intertrigo:

1- PS ←
2- SD ← Sebomic dermatitis
3- Simple (Treated by ↓ Friction & moistures; (intertrigo) but if No response → Consider Strept inf).
4- other causes (See fungal inf).

(III) (1) oral penicillin for 10 ds — if No result → Consider G-ve. mixed inf. (proteus)
(2) Topical Antibiotics + weak Cs.

NB: **Perineal Dermatitis = Perianal Cellulitis** (+)
(Streptococcal perianal dis.)

- GABHS
- Age: usually bet. 1 - 8 Ys (usually < 4 Ys)
- Clinically: ◦ itis Dermatitis rather than Cellulitis.
  - ◦ infs usually: preceded by pharyngitis (so always be considered in patients ē Guttate PS).
  - ◦ perianal Erythema (2-3 cm) around the anal Verge ass. with tenderness → painful defecation → retention, Bloody streaks, Soiling of Clothes.

NB: penis & vulva ± affected.

- DD → See Perianal pruritus. (or) Napkin Rash.
- III → (1) Antibiotics (2-3 ws) — then → perianal swab to detect Nephritogenic Str.
  (2) Topical Antibiotics.

Blistering distal Dactylitis:

- Age: Typically 2-16 Ys

CIP

- Tense superficial blisters on a tender Erythematous base over the volar fat pad of phalanx of finger or thumb & ± Toe. (± Nail fold digits)
- Organism: Strept or Staph ⇄ Aureus / Epidermidis.
- Tt: (1) incision & drainage (2) Topical antibiotic (3) Systemic antibiotics (prevent New inf or extension of inf).

Toxin mediated strept inf ←

Scarlet Fever (Scarlatin)

- AET: GABHS Erythrogenic toxins A, B & C → DHR
- Age: 1-10 Ys (after 10 Ys; 80% developed Antibodies.)
- Hx: (1) usually: following Tonsillitis or pharyngitis
  (2) may follow Surgical Wounds (surgical scarlet fever)

CIP

- Age: 1-10 Ys
- Hx: Tonsillitis or pharyngitis
- Prodromal symptoms → FAHM, sore throat, abd. pain & Vomiting
- Rash: start after 1-2ds; at the Neck / Chest / axillae (Sandy rash) → 4-6 hrs → involve the Whole Body
- Ch By: Tiny papules on Erythematous backgrounds (sunburn ē goose pimples)
  - Flushed cheeks (slapped cheeks)
  - Circumoral Pallor
  - Tongue: at first white ē bright red papillae → then Beefy (strawberry).
- Pastia's Sign: linear petichial (purpuric rash) streaks at axillary, inguinal & antecubital creases.
- Desquamation: after 1-2wks & continue for 2-6 wks at Hands / Feet

- Angular Cheilitis → See Candidiasis

Necrotizing Fasciitis

- Def: Acute Necrotizing inf. involving the Fascia
- Source of inf: 1. Denovo
  2. Following Surgery or perforating Trauma or Cellulitis.
- organism: many be involved:
  - strept.
  - Staph
  - entero cocci
  - Pseudomonas
  - Bacteroides.

→ So 2 Types
- Type I → polymicrobial (90%)
- Type II → streptococcal (10%) = unimicrobial

- Clp:
  - 1-2 ds after Entry → Tense spreading
  - redness, Pain, Oedema → Central patches of (blue-dusky discoloration) with or without Serosanguineous blisters (bullae)
  - Anaesthesia of involved skin is (very Chic)
  - Severe Systemic Toxicity: fever, chills, Malaise, shock & ↑WBCs.
  - 4th-5th d.:
    - purpule areas become Gangrenous
- MR: 20% (in best circumstances) (20-40%)
- ttt → 1- Early surgical intervention

NB Signs that aid in delineating the extent of (deep) involvement include:

↓↓
1. Hypotension
2. WBC > 15.4
3. Na serum < 135 mmol/L
4. MRI.

2- IV antibiotics

3- IVIG: ± useful (in) Type II.

① Streptococcal TSS (Strept. toxic shock like synd.)

Def. Rapidly progressive, often Fatal illness

Caused by GABHS commonly presented c:

- Fever
- Shock
- Multiorgan Failure
- Soft tissue inf.

→ (M Type 1 & 3)

- **Etiopathogenesis:**
  - **Source of Entry** < unknown ? (50%) / disruption of Cut. barrier → Streptococcal entry (M Types 1 & 3)
  - → release of Exotoxins A & B → shock & Tissue injury by 2 mechanisms:
    1. As Super antigens (bound to MHC II on APC & Vβ region on T cell R.) → TNFα & IL1
    2. formation of M protein / Fibrinogen Complex.
  - NB: IL6 play a Crucial protective role via ↓↓ TNFα

- **Epidemiology:**
  - Age: 20–50 y.
  - Sex: M=F.
- **C/P:**
  1. Pain: Severe local pain in extremities is the most common initial Symptom with or without (50%) Signs of Soft tissue inflamm (4 sign.)
  2. Violaceous hue, bullae or Necrosis → indicat. deeper inf. (Necrotizing fasciitis or Myositis) → Bad Prognos.
  3. Non specific flow like Symptoms: Fever, Chills, Myalgia, diarrhoea, Fever

④ Shock & MOF : after 2-3 d.

⑤ Severe Complication may occur :

- RDS
- RF
- DIC
- Death (30-60%) [MR].

Case Definition of Staph TSS (Criteria for Dx)

- Isolation of GABHS from NLly Sterile site (Blood, CSF & Biopsy).

or

- Isolation from non sterile site (throat, sputum, vagina)

and

- Hypotension: SBP < 90

and

- ≥ 2 of the following Signs:
  - Renal impairment
  - Coagulopathy (PLT < 100,000) DIC
  - Liver Impairment
  - RDS
  - ~~Generalized~~ macular Erythema
  - Skin (±) desquamation.
  - Soft tissue Necrosis.

DD
- TSS (Strept. TSS differs from Staph TSS in)
  - older Age 20-50
  - rapid progressive
  - severe
  - +ve Blood Culture (Sur)
  - MR 30-60%
  - → extremity pain.
  - Soft Tissue Necrosis
- SSSS
- Kawasaki
- Early TEN
- RMS

	Staph. TSS	Strept. TSS
· Age	· 15–35	· 20–50 Y.
· Etiology (Source)	· Menstrual & non Menst.	· Unknown or skin break., varicella, Bruises & bullae.
· Pain in Extremities	—	· Common
· Diffuse Macular Eryth.	· Very Common	· less common
· Vesicles & bullae	· rare	· less Common (5%)
· Soft tissue inf.	· rare	· Common
· Hypotension	· 100%	· 100%
· RF.	· Common	· Common
· Blood Culture +ve	· <15%	· >50%
· MR.	· <3%	· 30–60%

Skin manifs are marked in Staph TSS.

(H) [1] Supportive ttt for shock → IV fluids & Vasopressors.

→ [2] Clindamycin: → -- bact toxins, (1st choice)

[3] Early surgical intervention eg drainage, debridement, Facietomy, amputation.

Skin diseases Caused by Coryneform bacteria

- def. { : G+ve
  : non spore Forming
  . Rod shaped.

Skin diseases related to coryneform bacteria

1. AV → propionibacterium acnes & P. granulosum.
2. Erythrasma → C. minutissimum.
3. Trichomycosis axillaris → C. tenius
4. Pitted keratolysis.
5. others:
   - Cut. ulcer of Cory. diphtheriae
   - JK group. Coryn bact → Commensal
   - Arcanobacterium infernum Haemolyticum.
6. shunt tube infect

. Erythrasma

. Def chr. superficial skin inf.
Caused by C. Minutissimum.
(G+ve, non spore forming, Rod shaped)

. Predisposing factors:
- obesity
- DM
- Excessive sweating & maceration.

C/P → 3 Varieties

1. Classical form: (Clonic)
   - 2nd most common.
   - at flexures: groin, Interglutteal & inframammary, axillae, Antecubital
   - patches ch by
     - Well defined
     - Finely scaly
     - pink - brown (Hyperpigmented)
     - slowly spreading

2. Toe webing: →
   - Most common.
   - bet 5th & 4th or 3rd & 4th Toes
   - Scaling, fissuring & maceration.
   - may be confused ē organisms in these ares: (Dermatophytes, Candida, G-ve, Staph. au.)

4 Generalized form: (Trunk & extremities): (disc form)

- least common
- Common among middle Aged black women
- Patches (as in classic form) at trunk & Proximal Ext.

Diagnosis → W.L Examination: Coral Red Fluorscence (pink-orange)

d.t Coproporphyrin III

Treatment

1. Systemic: Erythromycin 250 mg /4 times/d for (1w)
2. Topical: (a) Antifungals — Azoles, Tolnaftate, Miconazole
   (b) Antibiotics — Fucidin, Erythromycin, Clindamycin.

"يتحف بعد ٢-٣ أسابيع"

NB • Causes of Pink fluorscence by W.L:

1. Follicular openings of NL skin of face & Trunk (? Propionibact).
2. Some Necrotic Tms
3. AV
4. Tongue
5. AN: in gyn. & axillae.

DD: See DD of T. Cruris.

Trichomycosis Axillaris (Trichomycosis Nodosa)

Def G-act. inf. of Axillary (less commonly pubic hair) Hair by Corynebacterium Tenuis (G+ve, Rod, non Spore)

Ch By: presence of yellow, red or black Concretions on Hair shaft.

C I P (3)

1. Concretions: Surrounding the hair shafts → Beaded appearance (yellow, red, Black).
2. Sweating is < Colored → Stain Clothes (Commonest Complaint) (Same Color of Concretions)
   Malodorous.

NB: · DD: 1. "Chromhidrosis" to diff. (by KOH + injected Hair) "show the bact. in the Concretions" (Corneb.)
2. Beaded Hair (See Hair).

Tt:
1. Clipping of Affected Hair
2. Antimicrobials: Erythromycin, Clindamycin & Fanoxyl.
3. Anti perspirants: "Drysol"

Pitted Keratolysis

(EM 2010) → Pitted Keratolysis

· Crateriform variant: no pits but the whole foot under MTP joint

Def. · Superficial skin Inf. Caused by Coryn.

· **Causative organisms**: many ← Micrococcus (Kytococcus) Sedentarius
Dermatophilus Congolensis
Coryne bact. / Actinomyces / Staphylococcus

C I P
1. Minute superficial pits & Erosions in St. Corneum (1-5 mm); usually at pressure areas of Sole (Heel & Toes). [d.t Proteases produced by Bact.]
2. Malodour [d.t sulfur products].
3. Hyperhidrosis (Commn but not essential).

Palm ± affected → Collarette rather than pits.

Tt: (Topicals)
1. Antibiotics
   · Fucidin
   · Erythromycin
   · Clindamycin
   · Benzoyl Peroxide
2. Antifungal
   · Miconazole
   · Clotrimazole
   · white Field
3. Anti-perspirants (Drysol)

Erysipeloid of Rosenbach

Self limiting

def. Acute bacterial infection of skin & other organs caused by the microorganism Erysipelothrix Rhusiopathiae (E. Insidiosa)

- organism: Gram +ve, non motile, rod shapped, Filament producing. Commensal pathogen in {Mammal, Bird, Fish}
- Risky pt. those dealing with fish or meat of infected animal, poultry or shellfish.

So
- Farmers
- Bucher
- Fishermen
- Vet. surgeon.

all are at risk.

- CIP (3 Varieties) → localized cut. [Erysipeloid of Rosenbach]
  → Generalized
  → Systemic

A) Localized Cut [Erysipeloid of Rosenbach]

- IP: (3 ds) (after inoculation by prick penetration by Fish, mammals or bird bones) → Trauma
- localized to area around the inoculation
- localized, Erythematous bluish patches that expand slowly & have well defined border → 2-4 ws → Spontaneous resolution (out desq.
  - Common area: Thandi, finger webs, forearms
  - ± ass e: Pain, Tenderness, oedema, blistering.

H
1) Self limiting e in 2-4 ws
2) Penicillin Ig Id for 5-10 ds
3) Erythromycin, Rifampacin, Tetracyclin.

B, why antib. despite its Self limiting ??
- Prevent dissemination
- accelerate the healing

B) Generalized (diffuse) cut

- Generalized pink - violaceous lesions e advanced edge
- ± systemic manifs

-ve Blood Culture.

C) Systemic

- ass e systemic manifs & Multiple organ affect
- +ve Bl. Culture.

Actinomycosis

Def: Subacute to Chronic Bact. Infection Ch BY:

- **clinically**:
  - Suppurating Abscesses
  - Granulomatous inflamm.
  - Sinus formation
  - Sulfur granules.

→ Can affect skin, bone & int. organs → Mycetoma like lesions

- **Caused by**: Actinomyces Israelii: (also A. bovis)
  - Gram +ve
  - Anaerobic or microaerophilic
  - Non acid fast.
  - branching or Filamentous
  - NL inhabitant of — Mouth, GIT, ♀ genital Tract.

(Also (in Soil) →)

(So inf. occurs by contagious, Endogenous spread).

- **Clinical Features** | (Types)
  1. Cervicofacial (50-70%)
  2. Thoracic (Pulmonary) (15-20%)
  3. Abdominal (10-20%)
  4. primary Cut. (Uncommon)
  5. Pelvic
  6. Lacrimal

- **Epidemiology**
  - **Age**: any age but Commonest 20-50 y.
  - **Sex**: ♂ > ♀.

① Cervicofacial Type (Lumpy Jaw)

- Most Common type (50-70%)
- Hx & Source of inf:
  - Bad oral hygiene
  - Dental Caries.
  - orofacial injury or procedure

→ Periodontal Abscess → periostetis & osteomyelitis → spread to skin.

- lesion ch by
  - Site: Mandible > Maxilla
  - Start as bluish area at mandible (jaw angle) → Nodules that's Erythematous, at first Tender Later painless & woody
  - → Formation of Fistulous abscesses that drain (purulent material) with (Chic (yellow) sulfur granules (Clumps of bacteria)
  - No ass L.N
  - ± FAHM.
  - ± Extension to < Maxilla / orbit

② Pulmonary Type (Thoracic):

- 2nd most Common (15-20%)
- Hx & Source:
  - Recurrent aspiration of infected oral material (Epilepsy).
- Lesion ch by:
  - pulmonary (Cavities) at lung bases → Chest Symptoms (Cough, dyspnea, ...)
  - Extension: to pleural → Chest skin → multiple draining Sinuses & Pleurocut. Fistulae.

③ Gastero intestinal Type:

- less Common (10-20%)
- Hx & Source
  - may occur Spontaneous or Following inflammatory Bowel disease or surgical procedure or ingest?

of F.B (Fish or chicken bone).

- CIP:
  - Non specific constitutional manifs.
  - Manifs of appendicitis.
  - Granulomatous affection of Bowel → appendicular mass → Spread to the skin.

Commonest areas → appendix / Caecum

- Extension:
  - liver → jaundice
  - Abd. wall → skin lesion
  - ovaries
  - Kidneys.

(4) Pelvic Type:

- History of IUCD.
- lower abd discomfort, menorrhagia
- pelvic mass.

→ No Cut. lesions.

Diagnosis

Sulfur granules
- 1 – 2 mm
- Yellow
- adherent to gauze dressing.

Mic: Narrow bacillary forms & Elongated Hyphae occasional branching.

Culture (difficult)
- "Heart-brain Blood inf. agar" →
- Anaerobic
- Enriched at 37 °C for 2–4 ds

→ white glistening Mycg. Colonies.

Histopath. (below.)

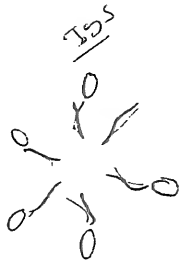
Pathology:

- at first → Suppurative (intense Neutrophilic infiltrate)
- Later → granulomatous
  - Center: Abscess with "granules"
  - Periphery:
    - Histiocytes
    - Epithelioid Cells
    - Giant cells

Granules ch' by:

- at low magnification → Cauliflower like (Branching filaments)

- at higher magnification → delicate branching filaments at the periphery of ω show Eosinophilic clubs composed of Immunoglobulins (Splendore-Hoeppli phenomenon). they resemble ray, hence the Name (Ray fungus).



Other Invs:

- CBC: anemia & leukocytosis
- ESR: ↑
- CRP: ↑
- CXR
- CT

#

① penicillin G 10-12 mill. U/d (IV) → surgical Excision → penicillin 2-5 Mu/d (IM)

② Other antibiotics: . Tetracycline
. Erythromycin
. Chloramphenicol
. Recently: Imipenem / Cilastatin
(Cover actinomyceles & Campylobacter Bacteria)

Emulcing

Helicobacter pylori Inf. & Skin diseases

Def. G-ve, microaerophilic bacterium that can inhabit various areas of stomach specially the antrum.

Disease caused by it:

A. GIT diseases: Gastritic, PU & Carcinoma

B. Cut. diseases: May have role in:

- AV
- Angioedema & Chr. urticaria.
- Atopy
- Behcet
- LCV
- Nodular prurigo
- Perioral Dermatitis
- Rosacea
- SS
- SSc
- Sweet. Synd.

Diagnosis: 1. H. pylori fecal Ag test. وسيبقى +ve بعد العلاج، لذا يستخدم للتأكد من تمام العلاج

2. Carbon 13 Urea breath test (UBT)

المريض يشرب يوريا + Carbon Isotope وبعد فترة بنفس تركيز الـ Carbon Isotope في النفس بنلاقيه زايد

(Urea splitted by H. pylori urease enz.)

3. H. pylori abs (IgG) لا يستخدم لتأكد فعالية العلاج

4. Antibiogram: in areas where is resistant to Clarith. & Metronidazole

Treatment → Triple therapy for 10-14 d.

(OAC)
- proton pump --- (omeprazole)
- Amoxicillin (if sensitive) → (metronidazole).
- Clarithromycin

(BMT)
- Bismuth subsalicylate
- Metronidazole
- Tetracycline

Borrelia induced skin diseases

- Def- & Introduct → see Lyme dis.

Role in skin diseases

- Direct Etiology
  - Cut. Manifs. of Lyme dis.
    - 1ry ECM
    - Disseminated ECM
    - Lymphocytoma cutis.
    - Acrodermatitis chronica atrophicans.
- Possible Etiology
  - Morphea
  - LSA
  - Jessner Lymphocytic infilt.
  - Parry Romberg Progressive hemifacial Atrophy
  - Shulman synd. (Eosinophilic fasciitis)

- NB ⇒ Types of Sycosis:
  1. Sycosis barbae/Vulgaris.
  2. Lupoid (Staph, granulomatous destructive)
  3. Mycotic (Zoophilic fungi).
  4. Herpetic.

• Role of Super Antigens in Skin diseases (Toxin Mediated skin diseases)

. Def. of Super Ag: Non antigen Toxins (Proteins) Secreted by Staph & Strept. → Stimulate T-Cell, → Secrete Massive amounts of Cytokines → Severe systemic Manifs.

. Difference bet. Antigen & Superantigen:

Superantigen differs from Antigen in:

1. No need for processing.
2. Not placed on MHC-II (of APC) Grove but placed directly at any place, But
3. Interact directly ē variable region "Vβ" of TCR, (on T cell)
4. More potent stimulat⁻ of T-cells (excite 5-30% of T-Cells Compared to ≃0.01% stim. by Ag) → Massive Cytokines release: IL1, IL6, & TNF →
   - Fever
   - Hypotension
   - shock
   - organ damage
   - Skin rash (Scarlatiniform or Morbilliform)
   - PP Erythema & Edema
   - Strawberry Tongue
   - Conjunctival inject⁻.

(Severity of Condit⁻ depends on < Toxin dose, Route, Immunological Status)

NB ① Sulphadizine Cream: if not in ~~lethal~~ dose → ↑ toxin product⁻.

② NSAIDs: ↓ Immunity & ↑ toxin product⁻.

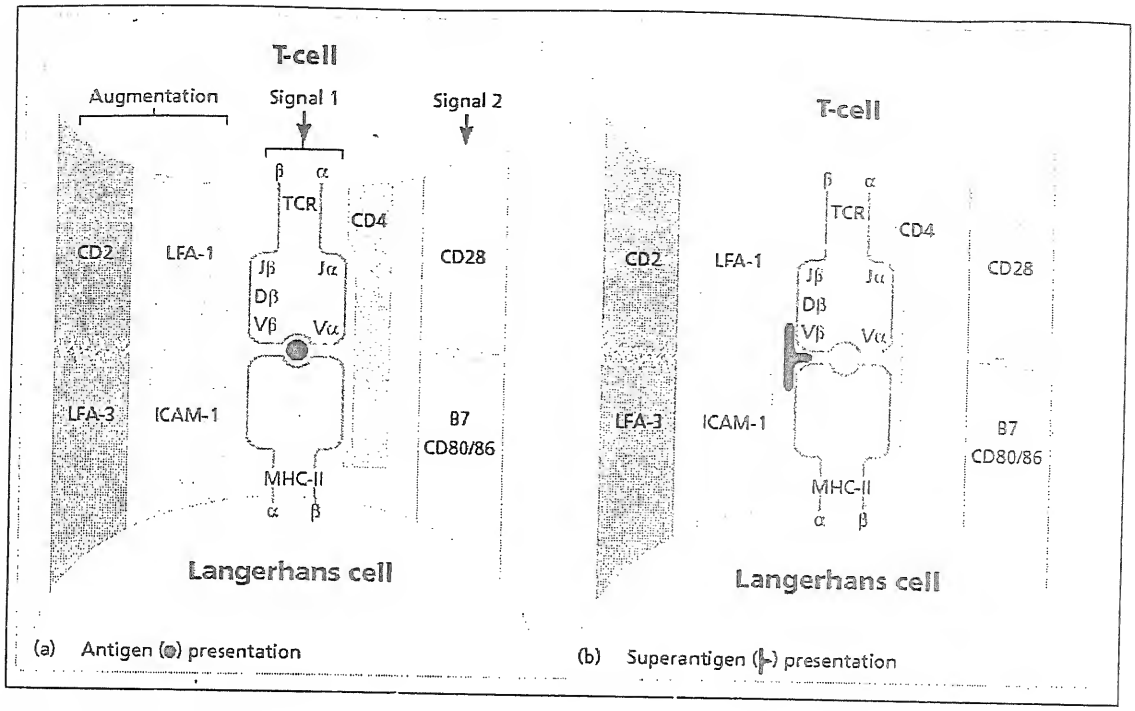


Fig. 2.12 T-lymphocyte activation by (a) antigen and (b) superantigen. When antigen has been processed it is presented on the surface of the Langerhans cell in association with major histocompatibility complex (MHC) Class II. The complex formation that takes place between the antigen, MHC Class II and T-cell receptor (TCR) provides signal 1, which is enhanced by the coupling of CD4 with the MHC molecule. A second signal for T-cell activation is provided by the interaction between the costimulatory molecules CD28 (T cell) and B7 (Langerhans cell). CD2/LFA-3 and LFA-1/ICAM-1 adhesion augment the response to signals 1 and 2. Superantigen interacts with the TCR Vβ and MHC Class II without processing, binding outside the normal antigen binding site. Activated T cells secrete many cytokines, including IL-1, IL-8 and interferon-γ, which promote in.ammation (Fig. 2.13).

- Toxins (Super antigens) Mediated Skin diseases:
  - SSSS
  - TSS (staph & strept Types)
  - (HL) — Recurrent Toxin Mediated perineal Erythema
  - Red Synd. (recalcitrant Erythematous & desquamative Synd).
  - Scarlet Fever
  - Necrotizing Fasciitis
  - Kawasaki dis — (Strept)
  - Psoriasis
  - Atopy (staph).
  - Food Poisoning.

Pseudomonas Skin inf.

(Andrews) · Emed · DNNZ.

1. Gram -ve Folliculitis
2. Hot tub folliculitis
3. Toe-web infection
4. Ecthyma Gangrenosum
5. Green Nail synd.
6. External Otitis
7. Blastomycosis like pyoderma

---

1. Gram -ve Folliculitis → See Acne vulgaris.

2. Hot-tub Folliculitis (Pseudomonas folliculitis):

Spa pool folliculitis

CIP: Folliculitis or Dermatitis

- Pruritic follicular, Maculopapular, vesicular or pustular lesions usually at sides of Trunk, axillae, buttocks & proximal Extremities [spare Face, Neck, Palms & Soles]
- usually (1-4) days after bathing in Hot Jacuzzi / Public swimming pool / Tub في البيت
- "the High temp → ↓ Free Chlorine (despite NL total Chlorine level) → Colonizat⁻ by Pseud."

Emed 2009

predisposing factors
1. Minor Trauma
2. Hot water
3. pH > 7.8
4. low chlorine < 0.5 gm/dl

entry → · Route of inf. < H. follicles / Skin break.

- Colonizat⁻ of bathing suit may occur so May transmit inf. « bathing suit folliculitis ».
- ± ass. with systemic manifs.
- Ht « Self limiting ē in 1-2 ws »

(1) Prophylactic:
- water filteratⁿ, automatic chlorinatⁿ, Frequent changing.
- Keep Chlorine (free) at 1 ppm level

• Keep Water PH at 7.2-7.8

Bad usually resistant to Topical antibs.

← ② Active ##: (if there is systemic manifest or Prolonged dis.):

- Fluroquinolones
- 3rd generation Cephalosporines.

NB Pseudomonas Hot foot Synd: reported in children, ch BY: painful, Erythematous, Planter Nodules or pustules after wading in a community pool whose Floor was Coated ē abrasive grit.

DD . Neutrophilic Eccrine Hidradenitis
. (إلتهاب الغدد العرقية النيوتروفيلية)

---

3. Toe Web Gram -ve inf.:

interdigital T. pedis (usually) start as dermatophyte infection only (dermatophytosis Simplex); then with Pseudomonas or G-ve inf. → dermatophytosis Complex.

- ↑ inflammation
- Maceration
- denudation ē purulent serous discharge.
- marked, Edema & Erythema of Surrounding tissues
- also ±: painful Calf Nodules that recur 1-2 ws.

① Dermatophytosis Simplex (Scaling & Peeling): → Topical Antifungal.

② Dermatophytosis Complex (wide spread Erythema, Edema & denudation)

→ Anti Pseudomonal Abx:

- 3rd general ceph.
- Fluroquinolones.

4. Ecthyma Gangrenosum

- Risk Factors (Gravely ill Patients). → (it's ass. with Pseud. bacteremia)
  - leukemia
  - Severe burn
  - Malignancy
  - Neutropenia or pancytopenia.
  - Severe chronic dis.

- CIP: ⇐ Tense Vesicles or pustules that surrounded by Narrow pink-Violaceous Halo ». → Hyic → rupture → round ulcers with Necrotic black Center.

Hyic Pustule surr. by Erythem. → 12 hrs. → Necrotic gangrenous ulcer surr. by Erythem.

- Site: perineal > gluteal > axillae > Extremities > Trunk
- Healthy infants may develop lesions in perineal area after antibiotic therapy in conjuct⌢ è macerat⌢ of diaper area.

- Diagnosis
  1. clinically: → Classic Pustule → ulcer.
  2. Vesicle Aspirat & Culture → G-ve bacilli
  3. Blood culture (if ass. Septicemia).
  4. Skin Biopsy → 2 Biopsies For < Histopath. / culture.

Treatment

1. Early institution of IV antibiotics
   Aminoglycosides + Antipseudomonal Penicillin (Piperacillin).
   ±
   GMCSF (adjuvant ## to ++ Myeloid precursors in Pts ⊂ Neutropenia).
2. If failed Medical → Surgical debridement.

7. Blastomycosis like Pyoderma

- large Verrucous plaques & elevated borders & Multiple pustules may occur as a chr. Vegetating inf.
- Most patient may have Immunosuppression (< local or systemic)
- Causative bact. ± :
  - Pseudomonas
  - S. aureus
  - Streptococci
  - E. Coli

Others

- Green foot synd
- Hot foot synd.
- *Septicaemia
- 2ry inf. of wounds, Ulcers & Burns.
- Periumbilical inf. of infancy → Foul smelling discharge.

4. Ecthyma Gangrenosum

- Risk Factors (Gravely ill patients): → (its ass. with pseud. bacteremia)
  - leukemia
  - Severe burn
  - Malignancy
  - Neutropenia or pancytopenia.
  - Severe chronic dis.

- CIP: ✱ Tense vesicles or pustules that surrounded by Narrow pink-Violaceous Halo ». → Hyic → rupture → round ulcers with Necrotic black Center

Hyic Pustule Surr. by Erythem. ↓ 12 hrs. Necrotic gangrenous ulcer surr. by Erythem.

- Site: perineal > gluteal > axillae > Extremities > Trunk
- Healthy infants may develop lesions in perineal area after antibiotic therapy in conjuct⌢ è macerat⌢ of diaper area.

- Diagnosis: (1) clinically: → Classic Pustule → ulcer.
  (2) Vesicle Aspirat⌢ & Culture → G-ve bacilli
  (3) Blood culture (if ass. Septicemia).
  (4) SKin Biopsy → 2 Biopsies For < Histopath. / culture.

Treatment

(1) Early institution of IV antibiotics
Aminoglycosides + Antipseudomonal penicillin (Piperacillin).
±
GMCSF (adjuvant # to ++ Myeloid precursors in pts ē Neutropenia).

(2) If failed Medical → Surgical debridement.

5. Green Nail Synd. & Green Feet Synd.

Green Nail: onycholysis + greenish discoloration (in the separated areas) (in chr. water users)

Green color is d.t Pyoverdin

Gentamycin ± / Neomycin (-ve)

Silver sulfadiazine ± effective / Mupirocin ±

Ht: ① Acetic acid 1 : Soak ترشيرنيا أكثر

② Trimming of the onycholytic areas + Neosporin sol. (ترشيرنيا)

· Green Feet Synd: d.t Colonization of rubber sports shoes wit. P. aurginosa

6. External Otitis:

· Common in swimmers

· C/P: Erythema, Edema, Swelling & Pain.

· Ht ① Prophylactic بيرابية : Otic Domeboro Sol.

acetic acid + Alum. acetate (anti bact + anti fungal; ↓ itching & inflamm.)

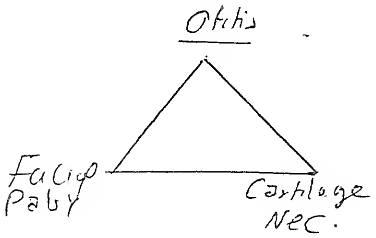
② Active Ht: acetic acid + Cs Sol.

· DD:

① CD: ... but Dermatitis may extend down the side of ! neck in pattern suggesting drainage of suspension.

(ممسرب ← للنويسيا الموجودة نقط الأذن...)

② Mg Otitis Externa: Severe type affecting Immuno suppressed ch'By Severe Erythema, Edema, Pain & Purulence & ± ass. ē Facial palsy & Cartilage Necrosis.



(Ht: Quinolones (4-6 ws)

③ Commercial Ear piercing of upper ear cartilage ± ⟶ Pseudom. ē deformity.

Pyodermatitis / Pyoderma Vegetans (PV)

تسمى — PV. of Hallopeau
— Blastomycosis like Pyoderma.. (Bact.) Staph. Imm. UnCo

- **Def.** disorder ch. by large Verrucous plaques c̄ elevated Borders & Multiple pustules.

- **Etiopath** : ??... Bact. Inf + Immuno Suppression
  - Bact. Inf ↙ Staph & Strept, But ± Fungal
  - ↘ Face & Flexures.
  - Immuno Suppression: HIV, Leuk. & Lymph., U. Colitis, Alcoholism.

.. **DD**

(1) Vegetans dis — Pemphigus Veget.; Pemphigoid Veg.

(2) Botrymycosis : Bact. Inf. in Immuno. Compromised Individual.
- Staph & E. coli
- Immun. supp.
- granules similar to Actinomyc.

= المصاب بعترهم يعمل ملكة الغرقرقة

'Basophilic grs. similar to that of Actinomycosis.

(3) Deep fungal inf. — Phycomycosis; Coccidioidomycosis.

(4) Others : Bromo / Iodo derma, Mycobact. Inf., Giant KA & PG.

(5) Pyodermatitis - pyostomatitis Vegetans : as Py. veget. but — affect Mucous. sites (oral & Flexural); Ass. ⓒ U. Colitis.

± ass ē IBD, cut PG (ulcerative), Veget. oral PG → (6) Pyostomatitis Vegetans لازم

- **HP** (2)
  - (i). Pseudoepitheliomatous Hyperplasia
  - (ii) Epid & dermal Abscesses
  - Staph is Isolated.

TTT مفيش غير كده

(i). Antibiotics + local — Curretage; Alum. Subacetate dressing

(ii) 20% human Albumin (100 ml) Infusion For 5 ds then → 40 mg Cs For month.

(iii) Correction of Immuno Suppression.

Pyoderma Vegetans

(تشبه Botrymycosis & Actinomycosis)

- (Inf.) Ch by: pustules, Verrucous plaques, ulceration
- Etiopath: Inf. + Immuno suppression
  - Inf.: Staph, Strept, Trichophyton Mentagrophytes
  - Immuno suppression: HIV, Ulcerative Colitis → Pyostomatitis Pyodermatitis Vegetans, Leukemia, LE Nephritis, Alcoholism & Malnutrition

H.S may cause reaction (Type III) → Pyod. Veget.

- Pt. ē Pyodermatitis pyostomatitis + U. Colitis has Anti BP 230 KD Antibodies
- C/P: plaques of pustules, verrucous, ulceration; may affect any area even flexural area (DD from pemphigus Veg.)
- HP: Pseudoepitheliomatous Hyperplasia + Abscesses in dermis & Hyperplastic epid.
- TTT:
  - Etiology (Suppression)
  - Antibiotics: Ceftriaxone; others Human Albumin + MTX
  - Wound care: Curettage, Alum. Subacetate wash, Zn oxide, ILCs, (disodium chromoglycate) — Healing of PG edge, Leg. ulcers. [illegible]

Botrymycosis

(Bunch of grapes)

May be related to: (1) Pyoderma Vegetans ✓ (2) it + Actinomycosis تشعات اسم → Bacteriosis (3) Isolated entity ✓

- Etiopath: Trauma + Inf. (chr. inf.) + Immunodef.
  - Inf.: Staph., Pseudomonas, E. Coli
- Inf. may affect: Skin, S.C.T, Ms, Bone, Int. organs (in lung)
- C/P:
  1. S.C Nodules
  2. large verrucous
  3. ulcers
  4. Sinuses → Pus ē Sulphur or Yellow granules (as Actinomycosis)

TTT. Surgical debridement

HS) Mycetoma: granule:
- Suppurative inflam.
- Bodies: Center: Basophilic (Bact. debris); Periphery: Homogenous, Eosinoph, hyaline, 2ry to Host Igs (Splendore phenom).
- PAS stain, Gram,